

# Installation Procedures for the Cavitymate™ Ultra Wall System

Using DuPont™ Styrofoam™ Brand Cavitymate™ Ultra Insulation



## SYSTEM OVERVIEW

### General Information

DuPont™ Styrofoam™ Brand Cavitymate™ Ultra Insulation provides an excellent option for meeting today's energy code requirements for brick and block wall construction. DuPont™ Great Stuff Pro™ Gaps & Cracks Polyurethane Foam Sealant is a single-component polyurethane foam sealant for general purpose building envelope air/vapor sealing.

Together, these two products form the basis of the Ultra Wall System, offering the best of both worlds: a high R-value wall (R-5.6 per inch) with exceptional air/vapor and water barrier capabilities.

With fewer steps than conventional masonry wall insulation systems, the Ultra Wall System can save contractors time and money. Once the veneer ties used to anchor the final building exterior are in place, it's easy to install by following the steps presented here.

### Equipment Guidelines

To install the Ultra Wall System on a masonry wall, you will need:

- Styrofoam™ Brand Cavitymate™ Ultra Insulation
- Great Stuff Pro™ Gaps & Cracks Polyurethane Foam Sealant
- PRO Series Foam Dispensing Gun
- Great Stuff Pro™ Foam Cleaner
- Spray adhesive, such as 3M High Strength 90
- Safety gloves
- Safety glasses

## INSTALLATION

### Safety and Conditions of Use

- An ambient temperature of 32°F or higher recommended.
- A substrate temperature of 32°F or higher for recommended.
- Do not install while raining. Some wall surface moisture is acceptable and will help cure **DuPont™ Great Stuff Pro™ Gaps & Cracks Polyurethane Foam Sealant**. However, test for proper adhesion if the wall appears excessively wet.
- For best results, use **Great Stuff Pro™ Gaps & Cracks** between 60–90°F. Protect cans from extreme cold or heat.

### Wall Preparation

Making sure the wall surface is properly prepared is a key step to a successful installation of the Ultra Wall System. To allow the system to function at maximum effectiveness, first ensure that:

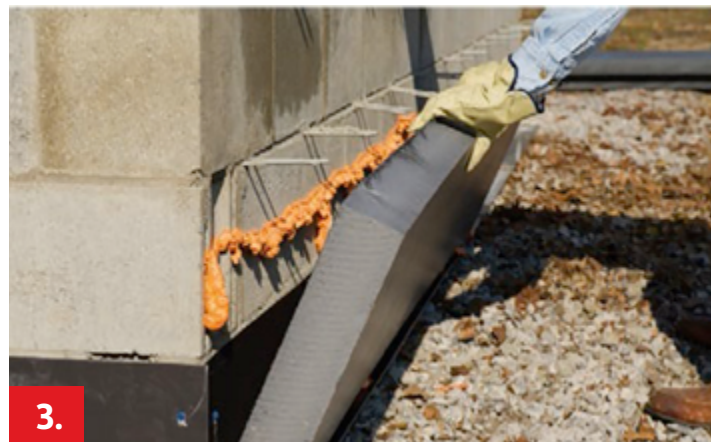
1. The wall surface is clean and free of any dirt or debris
2. Wall ties are properly installed and spaced
3. The temperature and moisture levels fall within acceptable parameters; refer to Table 1 for recommended conditions
4. **DuPont™ Styrofoam™ Brand Cavitymate™ Ultra Insulation** boards are clean and dry

### General Recommendations

- All boards are installed horizontally (15-3/4" x 96" orientation).
- Begin at the bottom of the wall. This is known as course 1.
- At a corner, leave an overhang equal to the board thickness to allow for staggering on each successive course. (Photo 1)

### Installation Overview

1. Ensure all skin is covered and safety glasses or goggles are worn when spraying **Great Stuff Pro™ Gaps & Cracks Polyurethane Foam Sealant**.
2. The first course\* of insulation requires additional extra adhesion support to the wall. Apply a 1" bead of **Great Stuff Pro™ Gaps & Cracks** on the wall above the flashing and just below the first row of wall ties. (If a termination bar is not used, apply the sealant just above the flashing to create the air seal.) (Photo 2)
3. With the printed side facing the exterior, angle the bottom of the **Styrofoam™ Brand Cavitymate™ Ultra Insulation** board into the corner of the base flashing, then rotate the top onto the wall between the brick ties. (Photo 3)
4. Press the board firmly against the wall to ensure contact with the **Great Stuff Pro™ Gaps & Cracks\***
5. Install adjacent boards across the rest of the bottom course the same way. Place adjacent boards approximately 1/2" from the edge of the previous board and rotate into position. Tap board into position from the opposite vertical edge, leaving a 1/4" gap.



**Note:** This installation guide illustrates one example of many ways to seal the first course. Another option is to install a waterproofing membrane prior to assembling the Ultra Wall System. In this case, creating a seal at the termination bar and flashing is important as the termination bar will push the rigid insulation away from the wall. For this reason, additional **Great Stuff Pro™ Gaps & Cracks** will be needed in this area.

\* Read the label and (Material) Safety Data Sheet carefully before use.



### Installing Remaining Courses

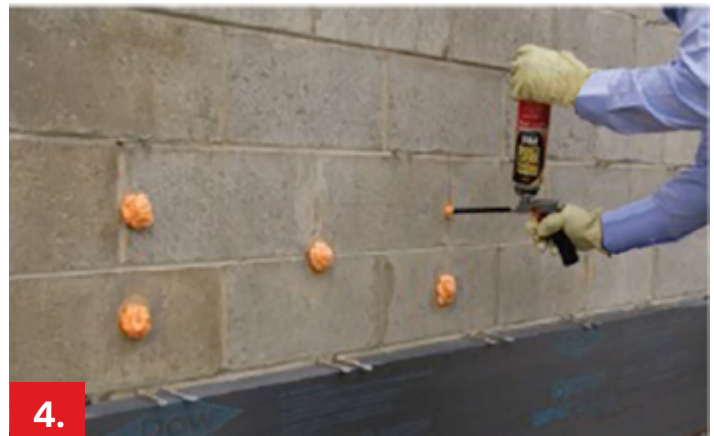
1. Cut the first board to be installed on the second course to 4' in length to allow for staggering of vertical joints.
2. Apply five balls of **DuPont™ GREAT STUFF PRO™ Gaps & Cracks Polyurethane Foam Sealant** in the pattern shown in Photo 4. Balls should be about 2" deep by 3" wide.
3. With the printed side out, facing the exterior, angle the **DuPont™ Styrofoam™ Brand Cavitymate™ Ultra Insulation** board into the top edge of the boards below, then rotate onto the wall.
4. Press the board firmly against the wall to ensure contact with the **Great Stuff Pro™ Gaps & Cracks**
5. After all boards are in position, insert the nozzle of the PRO Series Foam Dispensing Gun in between all vertical and horizontal joints and fills with **Great Stuff Pro™ Gaps & Cracks** until bead of foam is visible at the surface edge. (Photo 5)

### Installing Around Penetrations

To install **Styrofoam™ Brand Cavitymate™ Ultra Insulation** around penetrations such as ducts, electrical boxes and pipes:

1. Cut opening in board approximately ½" to 1" larger than the measured penetration.
2. Slide board over the penetration. (Photo 6)
3. Fill the gap between the penetration and the board with **Great Stuff Pro™ Gaps & Cracks**. (Photo 7)

**Note:** All penetrations need to be sealed to the base structure to ensure that the air barrier system is maintained.



## Installing Around Windows and Doors

### Window Jamb

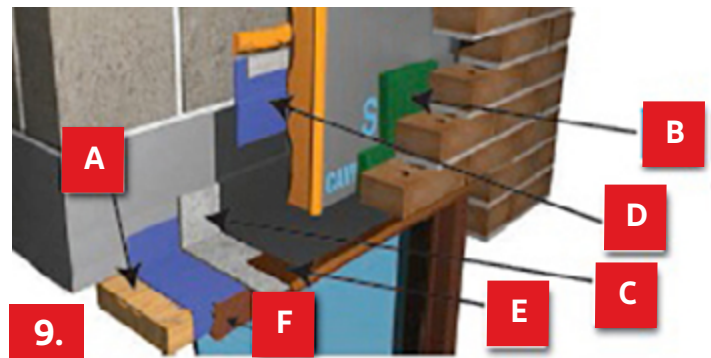
1. Attach wood nailer to block shown in illustration. (Photo 8)
2. Apply DuPont™ Great Stuff Pro™ Gaps & Cracks Polyurethane Foam Sealant to the interface between the wood nailer, block and DuPont™ Styrofoam™ Brand Cavitymate™ Ultra Insulation board.
3. Install window per window manufacture installation instructions.
4. Seal window as necessary, depending on window design.
5. Flash with LiquidArmor™ Flashing and Sealant as necessary at terminations. It may be necessary to apply a primer, such as 3M High Strength 90, to the block and/or other substrates to ensure proper adhesion.

**Note:** Illustrations and details shown are for window applications, but can be utilized for doors or other through-wall openings.

**Note:** Only Great Stuff Pro™ Window and Door Polyurethane Foam Sealant should be used for window and door installation.



8.



9.

### Window Header (Refer to callouts in Photo 9)

1. Install solid fire-rated 2X continuous wood blocking (no joints) and attach to the steel angle on the front side of the block at the back side. (A)
2. Install window per window manufacturer installation instructions.
3. Install loose-laid structural steel angle. (C)
4. Install pre-formed metal drip edge (E) with required separation between drip edge and steel angle.
5. Install flashing (D) with termination bar at top.
6. Install cavity drainage net as needed. (B)
7. Install weeps as required.
8. Install closure angle (F) to match window material and finish (e.g., aluminum clad, vinyl clad).



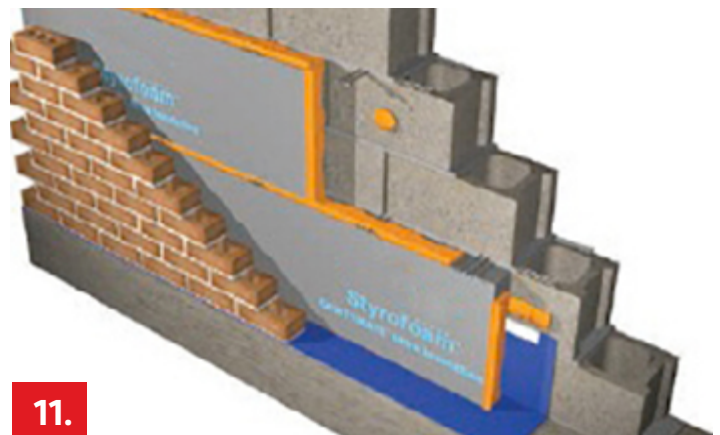
10.

### Installing Around Parapet (Roof/Wall)

Follow previous instructions for course installation to the top of the wall.

### Installing at Foundation

Follow previous instructions for first course installation when installing at foundation. (Photo 11)



11.

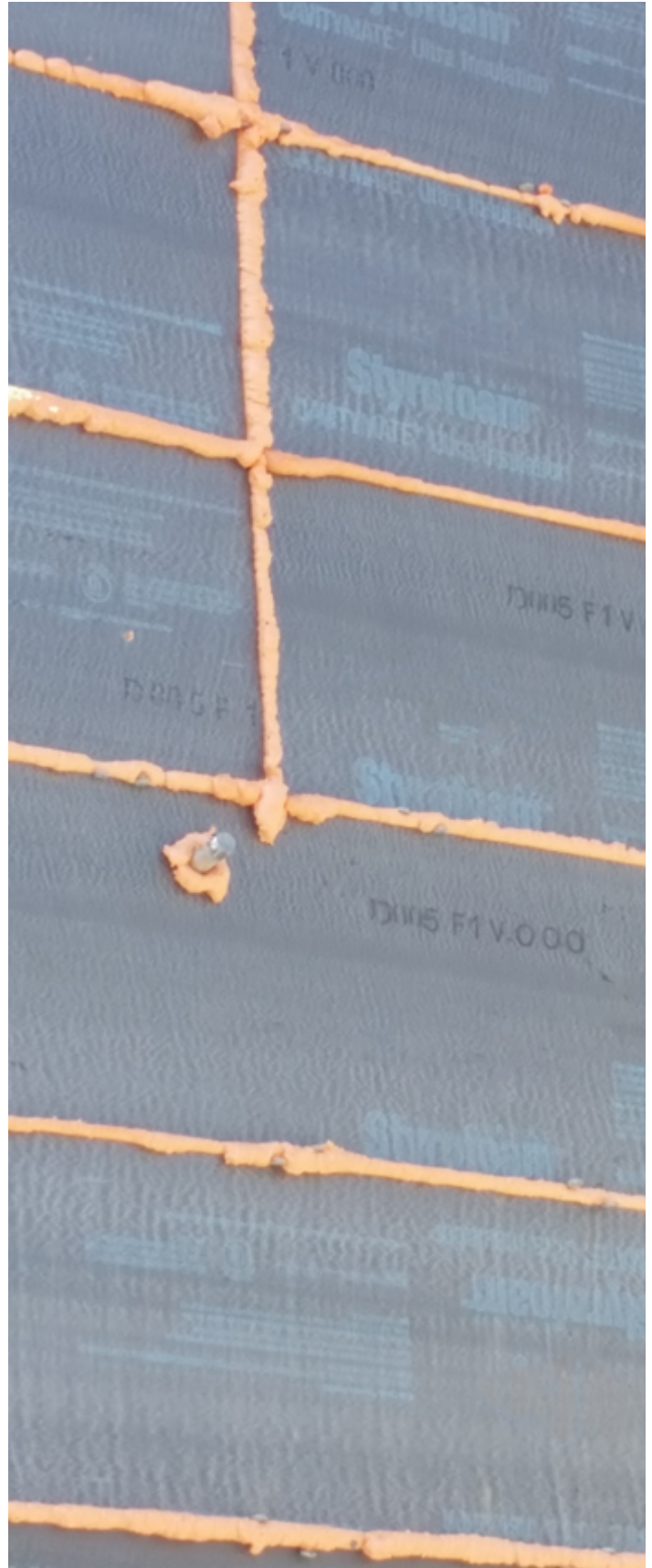
## Safety, Product Storage and Use Recommendations

### DuPont™ Styrofoam™ Brand Cavitymate™ Brand Insulation

- Do not leave Styrofoam™ Brand Cavitymate™ Brand Insulation exposed to direct sunlight for more than 90 days. Consult a Dow representative if exposure is expected to be longer than 90 days. Prolonged exposure to ultraviolet radiation may cause the surface of Styrofoam™ Brand Cavitymate™ to become faded and dusty.
- The surface degradation will have no measureable effect on the insulating value of the plastic foam unless the deterioration is allowed to continue until actual foam thickness is lost. Since the dust would impair the performance of the adhesives and finishes, dusty surfaces should be brushed off before these products are applied.
- A light-colored, opaque protective covering should be used if excessive solar exposure is expected. When stored outdoors, keep insulation boards tarped or covered to protect from weather and weighted down to prevent boards from being blown around by the wind.
- Store above standing water

### DuPont™ Great Stuff Pro™ Gaps & Cracks Foam Sealant

- Great Stuff Pro™ Gaps & Cracks Polyurethane Foam Sealant is easy to use following the instructions printed on each can.
- Always cover all skin and protect eyes when spraying.
- Make sure application surface is free of dust and dirt (a damp surface will not impair the bond).
- Use PRO Series Foam Dispensing Guns to ensure clean and precise dispensing for professional results.
- Read the label and (Material) Safety Data Sheet carefully before use.
- Great Stuff Pro™ Gaps & Cracks contains isocyanate and a flammable blowing agent. Vapors may travel to other rooms. Ensure adequate ventilation and shut off all pilot lights and open flames; eliminate all sources of ignition before use. Do not smoke or use lighters or matches while dispensing foam.
- Do not breathe vapors or mists. Use in well-ventilated areas or wear proper respiratory protection. Isocyanate is irritating to the eyes, skin and respiratory system and may cause sensitization by inhalation or skin contact.
- Great Stuff Pro™ Gaps & Cracks is very sticky and will adhere to most surfaces and skin. Do not get foam on skin. Wear gloves and goggles or safety glasses. Cured foam must be mechanically removed or allowed to wear off in time.
- The contents are under pressure. The can may burst if left in areas susceptible to high temperatures such as motor vehicles, or near radiators, stoves or other sources of heat. Do not place can in water. Do not puncture incinerate or store can in temperatures above 120°F.





## Best Practices for Using PRO Series Foam Dispensing Gun

| Using the Gun                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Cleaning the Gun                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Inspecting the Gun                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Shake the can well</li> <li>2. Screw the can on the adapter, holding the gun upside down.</li> <li>3. Open the set-screw by turning it counter clockwise. The trigger is unblocked.</li> <li>4. The PRO gun is now ready to be used.</li> <li>5. The foam output can be closed by activating the trigger/by turning the set-screw.</li> <li>6. As soon as the can is empty, replace it with a new one.</li> <li>7. If the gun is not used within 30 days, leave a can containing foam on the screw adapter; make sure that the can is stored in a vertical position.</li> <li>8. If the can is empty, remove it and clean the gun in order to prevent foam from curing inside the gun.</li> </ol> | <ol style="list-style-type: none"> <li>1. Unscrew the can holding the gun upside down.</li> <li>2. Remove remaining foam from the nozzle and the basket with cleaning fluid (never use water).</li> <li>3. Screw a cleaner can on the adapter.</li> <li>4. Activate the trigger in order to fill the gun with cleaner and spray until all foam has come out of the barrel.</li> <li>5. Leave the cleaning fluid in the gun for several minutes.</li> <li>6. Spray again by activating the trigger.</li> <li>7. Remove the cleaner can.</li> <li>8. Activate the trigger until the gun is completely empty.</li> <li>9. The gun is now clean and can be used again or left aside for a longer period.</li> </ol> | <p>In case foam leaks out of the gun even when the trigger is not activated, take a cardboard box and give a short output by pulling the trigger as far as possible and release at once. The needle will return back to its original position. Alternatively, a complete check-up can be performed:</p> <ol style="list-style-type: none"> <li>a) Unscrew the can and follow the instructions under "Cleaning the Gun".</li> <li>b) Remove the needle and clean the tip with solvent.</li> <li>c) Remove the nozzle and check whether it is worn out or polluted. In the event it is no longer in good condition, replace with a new one.</li> </ol> |



**For more information visit us at**  
**[Styrofoam.com/cavitymate](http://Styrofoam.com/cavitymate)**  
**or call 1-866-583-2583**

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**CAUTION:** This product is combustible. Protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult (Material) Safety Data Sheet ((M)SDS), call DuPont at 1-866-583-2583 or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

**WARNING:** Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including DuPont can give assurance that mold will not develop in any specific system.

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